



Alpha Magnetic Spectrometer
NASA / DOE

Alpha Magnetic Spectrometer Weekly Reports

October 15, 2004



National Aeronautics and
Space Administration

Upcoming Events:

- Meeting to discuss CITE Maintenance Costs - TBD (due to Hurricane Jeanne) – KSC
- AMS General Technical Interchange Meeting (TIM) - October 18 - 22, 2004 – JSC
- Electronics TIM and Uninterruptible Power Supply (UPS) CDR - November 1-5, 2004 – Taiwan
- STA Vacuum Case Delivery (on dock at STADCO) - November 30, 2004
- Flight Vacuum Case Delivery (on dock at STADCO) - December 15, 2004
- Thermal Control System (TCS) Delta Critical Design Review (Δ CDR) - January, 2004 – JSC
- AMS General TIM - January 10 - 14, 2005 – KSC
- Tracker Thermal Control System (TTCS) PDR - January 2005, CDR - April 2005
- AMS-02 Phase II Safety Review - March 2005 - JSC

Upcoming Tests:

- AMS-02 Avionics Functional Interface Test (FIT) - January 2005 – KSC
- O-Ring Test Fixture (OTF) Vacuum Test - Suspended - J13
- Interface Plate Static Test - Date TBD - Location TBD
- Lower Joint Static Test - Date TBD - Location TBD
- STA Acoustic Test - Date TBD - ESTEC - Noordwijk, Netherlands (Schedule under review)
- STA Sine Sweep Test - Date TBD - INFN - Terni, Italy (Schedule under review)
- Full Assembly Modal & Static Tests - Date TBD - IABG - Munich, Germany

Status:

- ***LMSO Alpha Magnetic Spectrometer (AMS) personnel supported a preplanning meeting for the AMS-02 Avionics Functional Interface Test (FIT) on October 14 - 15 at the Kennedy Space Center (KSC). The FIT is currently scheduled for January 2005 at KSC.
- ***LMSO AMS personnel supported the AMS-02 Cryocooler Critical Design Review (CDR) at the Goddard Space Flight Center (GSFC) on October 15.



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- ***Preparations are continuing for the hosting of the AMS General Technical Interchange Meeting (TIM) the week of October 18 - 22 at the Center for Advance Space Studies (CASS). LMSO is responsible for coordinating all activities associated with the TIM with CASS personnel and hosting an evening reception for our international visitors.
- Work was initiated on a concept layout for a micrometeoroid/orbital debris shield for the high-pressure gas bottle .
- An EVA envelope layout was developed for the AMS-02 Payload Assembly to determine areas where kick loads could potentially be transferred to payload components.
- A detailed AMS-02 Payload Integration Schedule was developed and provided to AMS project management for review and comment.
- Twenty-five Unique Support Structure - 02 (USS-02) Drawings were updated and submitted to Checking for a final check prior to release.
- The drawings for the Vacuum Case Test Fixture Base were reviewed and comments are being incorporated. The drawings will be ready for formal check by October 18. Future work will concentrate on the Transition Frames, Rotation Frame, Z Standoffs, and installation drawings.
- CAD models of the Lower Vacuum Case Joint, the Upper and Lower Trunnion Bridge Beams, and the Lower Angle Beam were provided to Stress for model verification.
- Three Vacuum Case (VC) Ground Support Equipment (GSE) drawings were updated and uploaded to the JSC Engineering Drawing Review System (EDRS) for approval and final release.
- Work was initiated on the drawing detailing Shipping Configurations. Appropriate models of the configurations were generated and drawing details are in work.
- A presentation on the Vacuum Case shipping configuration was created for briefing JSC Shipping and Receiving personnel. JSC Shipping and Receiving will be responsible for shipping the Vacuum Case from STADCO to JSC after the Flight and Structural Test Article (STA) Vacuum Cases are completed and accepted at STADCO.
- Two Discrepancy Reports (DRs) documenting fabrication errors at STADCO were closed. Interim dispositions were submitted for three other DRs and copies were sent to STADCO. Once the interim dispositions have been approved, the DRs will be closed.
- The First Article Conical Flange was scheduled for metal finish, but the vendor determined that the stainless steel tooling required to support the part would not hold up during the anodizing process. Since this part is the pathfinder for processing, the tooling design is being re-examined and could potentially require a re-design. This process, including the tooling that is used on this pathfinder, will be used for metal finishing every part on the Vacuum Case.



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- Due to continuing issues with STADCO, a meeting is being planned for October 26 - 27 at STADCO. This meeting is being delayed one week in order to support the AMS-02 General TIM next week at JSC.

- Vacuum Case Milestones

<u>Contract Deliverable</u>	<u>Due Date</u>	<u>Status</u>
First Article Conical Flange Complete	July 2004	(Machining complete, metal finish in work)
Weld Fixture Complete	August 2004	(Currently in use for rolled ring weld tests)
STA Support Rings Complete	September 2004	(Machining complete, metal finish in work)
Weld Development Complete	September 2004	(Flat plate qualification test in work)
STA Conical Flanges Complete	September 2004	(Machining complete, metal finish in work)
Flight Support Rings Complete	October 2004	
First Article Weld Complete	October 2004	
Flight Conical Flanges Complete	October 2004	
Shipping Fixture Complete	October 2004	(CDR complete)
STA Line Drill Operations Complete	October 2004	
STA Match Drill Procedure Complete	October 2004	
STA Weld Complete (for proof test @ STADCO)	November 2004	
STA Vacuum Case Delivery (on dock at STADCO)	November 30, 2004	
Flight Vacuum Case Delivery (on dock at STADCO)	December 15, 2004	